AMENDMENTS TO THE CLAIMS

1. (currently amended) A distributed block frequency converter for ~~combining a plurality of channel signals into a combined RF signal~~, comprising:

a plurality of combiners, each combining at least two of a plurality of channel signals into a corresponding one of a plurality of combined channel signals;

an up-converter synthesizer that generates an up-converter local oscillator (LO) signal;

a plurality of up-converter mixers, each mixing the up-converter LO signal with a corresponding one of the plurality of combined channel signals and providing a corresponding one of a plurality of intermediate frequency (IF) signals;

a plurality of bandpass filters, each receiving a corresponding one of the plurality of IF signals and providing a corresponding one of a plurality of filtered signals;

a plurality of down-converter synthesizers, each generating a corresponding one of a plurality of down-converter LO signals, the plurality of down-converter LO signals separate from each other in frequency;

a plurality of down-converter mixers, each mixing a corresponding one of the plurality of down-converter LO signals with a corresponding one of the plurality of filtered signals and providing a corresponding one of a plurality of radio frequency (RF) signals; and

~~an RF~~ <u>a RF</u> combiner that combines the plurality of RF signals into a combined RF signal <u>output at a lower frequency than the plurality of filtered signals</u>. New Matter

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2. (original) The distributed block frequency converter of claim 1, further comprising:

a plurality of up-converter synthesizers, each generating a corresponding one of a plurality of up-converter LO signals provided to a corresponding one of the plurality of up-converter mixers.

3. (original) The distributed block frequency converter of claim 1, wherein each of the plurality of channel signals are modulated channel signals.

4. (original) The distributed block frequency converter of claim 3, wherein at least one of the plurality of modulated channel signals is time division multiplexed incorporating data for a plurality of users.

5. (original) The distributed block frequency converter of claim 1, wherein each of the plurality of combiners receives a subset of the plurality of channel signals, and wherein each channel signal of each subset of channel signals are separated in frequency by a predetermined frequency value.

6. (original) The distributed block frequency converter of claim 5, wherein at least two of the subsets of channel signals comprise a same set of channel frequency values.

7. (original) The distributed block frequency converter of claim 1, wherein each of the plurality of combined channel signals are centered at approximately the same frequency value.

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8. (original) The distributed block frequency converter of claim 1, wherein the plurality of combiners includes a first combiner that combines a first number of the plurality of channel signals and a second combiner combines a second number of the plurality of channel signals, wherein the first and second numbers are different.

9. (original) The distributed block frequency converter of claim 7, wherein the first LO signal has a frequency such that when mixed with the plurality of combined channel signals by the plurality of up-converter mixers, the resulting plurality of IF signals are centered at a predetermined global system for mobile communications (GSM) frequency.

10. (original) The distributed block frequency up-converter of claim 9, wherein the GSM frequency is between 800 - 1000 MHz.

11. (original) The distributed block frequency converter of claim 9, wherein each of the plurality of bandpass filters are GSM filters.

12. (original) The distributed block frequency converter of claim 11, wherein each of the plurality of channel signals are separated by a frequency of approximately 6 megahertz (MHz), wherein each of the plurality of combiners combines four channel signals into a corresponding combined channel signal having a bandwidth of approximately 24 MHz, and wherein each of the plurality of bandpass filters have

an associated bandwidth of at least 24 MHz.

13. (original) The distributed block frequency converter of claim 1, wherein the plurality of bandpass filters are image reject filters.

14. (original) The distributed block frequency converter of claim 1, wherein each of the plurality of down-converter LO signals are separated by a predetermined block frequency value.

15. (original) The distributed block frequency converter of claim 14, wherein the block frequency value is approximately 50 Megahertz (MHz).

16. (original) The distributed block frequency converter of claim 15, wherein each of the plurality of down-converter synthesizers has a phase noise spectrum of at least 95 dB at 10 kHz off-center frequency.

17. (original) The distributed block frequency converter of claim 1, wherein each of the plurality of down-converter synthesizers are frequency adjustable.

18. (original) The distributed block frequency up-converter of claim 1, wherein each of the plurality of channel signals are in digital format and wherein each of the plurality of combiners is a digital combiner.

19. (original) The distributed block frequency converter of claim 18, further comprising:

a plurality of digital modulators, each modulating a stream of framed digital data of a corresponding channel into a corresponding modulated channel signal.

20. (original) The distributed block frequency converter of claim 19, further comprising:

a plurality of modulator combiner units, each including digital modulators for modulating multiple channels and at least one of the plurality of combiners, and each combining the multiple channels into a combined channel signal.

21. (original) The distributed block frequency converter of claim 20, wherein each modulator

combiner unit further includes an adder that combines a combined channel signal from another modulator combiner unit with another combined channel signal to enable daisy chaining of the combiner units.

22. (original) The distributed block frequency converter of claim 18, further comprising:

a plurality of digital to analog converters (DAC), each DAC converting a corresponding one of a plurality of combined channel signals from digital to analog format.

23. (original) The distributed block frequency converter of claim 1, further comprising:

a plurality of modulators, each modulating a stream of framed digital data of a corresponding channel into a corresponding modulated analog channel signal.

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24. (original) The distributed block frequency converter of claim 23, wherein each of the plurality of modulators includes an internal digital to analog converter (DAC).

25. (original) The distributed block frequency converter of claim 23, wherein each of the plurality of combiners is an analog combiner.

26. (currently amended) A distributed block frequency converter for combining a plurality of channel signals into a combined RF signal, comprising:

at least one combiner that combines a plurality of channel signals into a combined channel signal;

an up-converter synthesizer that generates an up-converter local oscillator (LO) signal;

an up-converter mixer that mixes the up-converter LO signal with the combined channel signal and that provides an intermediate frequency (IF) signal;

a bandpass filter that receives the IF signal and that provides a filtered signal;

an adjustable down-converter synthesizer that generates a down-converter LO signal;

a down-converter mixer that mixes the down-converter LO signal with the filtered signal and that provides a first radio frequency (RF) signal; and

an RF combiner that combines the first RF signal with at least one other RF signal into a combined RF signal output at a lower frequency than the filtered signal.

27. (original) The distributed block frequency converter of claim 26, wherein the at least one other

RF signal incorporates at least one additional channel signal. Dohan

28. (currently amended) A method of block combining a plurality of channel signals into a combined RF signal for transport, comprising:

combining each of a plurality of subsets of a plurality of channel signals into a corresponding one of a plurality of combined channel signals, each subset including at least two channel signals;

mixing each of the plurality of combined channel signals with an up-converter local oscillator (LO) signal to provide a corresponding plurality of intermediate frequency (IF) signals;

bandpass filtering each of the plurality of IF signals into a corresponding plurality of filtered signals;

generating a plurality of down-converter LO signals separated from each other in frequency;

mixing each of the plurality of down-converter LO signals with a corresponding one of the plurality of filtered signals to provide a corresponding plurality of radio frequency (RF) signals; and

combining the plurality of RF signals into a combined RF signal output at a lower frequency than the plurality of filtered signals.

29. (original) The method of claim 28, further comprising:

generating a plurality of an up-converter LO signals; and

said mixing each of the plurality of combined channel signals with an up-converter LO signal comprising mixing each combined channel signal with a corresponding one of the plurality of an up-converter LO signals.

30. (original) The method of claim 28, further comprising:

separating each channel signal of each subset of channel signals in frequency by a predetermined frequency value.

31. (original) The method of claim 28, wherein said combining a plurality of subsets of a plurality of channel signals includes centering each of the plurality of combined channel signals at approximately the same frequency value.

32. (original) The method of claim 28, further comprising:

adjusting the frequency of each of the plurality of down-converter LO signals to locate each of the plurality of RF signals within an available frequency range.

33. (original) The method of claim 32, wherein said adjusting comprises adjusting the frequency of each of the plurality of down-converter LO signals to reduce interference between the plurality of RF signals.

34. (original) The method of claim 28, further comprising:

modulating each of the plurality of channel signals prior to said combining.